

CLAIMS

1. A method of making a stent, comprising:
 - providing a mandrel having a stent pattern;
 - filling the stent pattern with a stent material; and
 - dissolving the mandrel.
2. A method of making a stent according to claim 1, further comprising providing a mandrel mold having the stent pattern, and wherein providing the mandrel includes forming the mandrel in the mandrel mold.
3. A method of making a stent according to claim 2, wherein forming the mandrel in the mandrel mold includes metal injection molding the mandrel in the mandrel mold.
4. A method of making a stent according to claim 2, wherein forming the mandrel includes placing powdered metal in the mandrel mold.
5. A method of making a stent according to claim 1, wherein the stent pattern includes a rounded trough surface.
6. A method of making a stent according to claim 1, wherein filling the stent pattern with the stent material includes depositing the stent material in the stent pattern using chemical vapor deposition.

7. A method of making a stent according to claim 1, wherein filling the stent pattern with the stent material includes filling the stent pattern with a porous stent material.
8. A method of making a stent according to claim 7, further comprising saturating the porous stent material with a fluid.
9. A method of making a stent according to claim 1, further comprising forming pores in at least a portion of the stent material.
10. A method of making a stent according to claim 9, further comprising saturating the porous portion of the stent material with a fluid.
11. A method of making a stent according to claim 1, wherein filling the stent pattern with the stent material includes:
providing a first layer of a first stent material in the stent pattern; and
providing a second layer of a second stent material in the stent pattern.
12. A method of making a stent according to claim 11, wherein the second layer includes a radiopaque material.
13. A method of making a stent according to claim 1, wherein filling the stent pattern comprises overfilling the stent pattern.

14. A method of making a stent according to claim 13, further comprising removing an excess portion of the stent material from the mandrel.
15. A method of making a stent according to claim 1, wherein dissolving the mandrel comprises partially dissolving the mandrel and then fully dissolving the mandrel, and wherein the method further comprises changing the configuration of the stent material after the partial dissolution of the mandrel and before the full dissolution of the mandrel.
16. A stent formed by the process of:
forming a mandrel having a stent pattern;
filling the stent pattern with a stent material; and
dissolving the mandrel.
17. A stent formed by the process of claim 16, wherein the process further comprises providing a mandrel mold having the stent pattern, and wherein providing the mandrel includes forming the mandrel in the mandrel mold.
18. A stent formed by the process of claim 17, wherein forming the mandrel in the mandrel mold includes metal injection molding the mandrel in the mandrel mold.
19. A stent formed by the process of claim 17, wherein forming the mandrel includes placing powdered metal in the mandrel mold.

20. A stent formed by the process of claim 16, wherein the stent pattern includes a rounded trough surface.
21. A stent formed by the process of claim 16, wherein filling the stent pattern with the stent material includes depositing the stent material in the stent pattern using chemical vapor deposition.
22. A stent formed by the process of claim 16, wherein filling the stent pattern with the stent material includes filling the stent pattern with a porous stent material.
23. A stent formed by the process of claim 22, further comprising saturating the porous stent material with a fluid.
24. A stent formed by the process of claim 16, wherein the process further comprises forming pores in at least a portion of the stent material.
25. A stent formed by the process of claim 24, further comprising saturating the porous portion of the stent material with a fluid.
26. A stent formed by the process of claim 16, wherein filling the stent pattern with the stent material includes:
providing a first layer of a first stent material in the stent pattern; and

providing a second layer of a second stent material in the stent pattern.

27. A stent formed by the process of claim 26, wherein the second layer includes a radiopaque material.
28. A stent formed by the process of claim 16, wherein filling the stent pattern comprises overfilling the stent pattern.
29. A stent formed by the process of claim 28, further comprising removing an excess portion of the stent material from the mandrel.
30. A stent formed by the process of claim 16, wherein dissolving the mandrel comprises partially dissolving the mandrel and then fully dissolving the mandrel, and wherein the method further comprises changing the configuration of the stent material after the partial dissolution of the mandrel and before the full dissolution of the mandrel.
31. A stent-forming element, comprising:
 - a mandrel comprising a soluble material, wherein the mandrel includes a surface having a stent pattern defined therein; and
 - a stent in the stent pattern.
32. A stent-forming element according to claim 31, wherein the mandrel comprises a molded mandrel.

33. A stent-forming element according to claim 32, wherein the mandrel comprises a metal injection molded mandrel.
34. A stent-forming element according to claim 31, wherein the stent pattern includes a rounded trough surface.
35. A stent-forming element according to claim 31, wherein the stent includes a porous material.
36. A stent-forming element according to claim 35, wherein the porous material is saturated with a fluid.
37. A stent-forming element according to claim 31, wherein the stent includes a first layer of a first stent material; and a second layer of a second stent material.
38. A stent-forming element according to claim 37, wherein the second layer includes a radiopaque material.
39. A stent-forming element according to claim 31, wherein the stent pattern is overfilled with the stent.

40. A stent-forming element according to claim 31, wherein the mandrel is partially dissolved away from the stent.
41. A mandrel for forming a stent, the mandrel comprising a soluble material having a surface, wherein the surface has a stent pattern formed therein.
42. A mandrel according to claim 41, wherein the mandrel comprises a molded mandrel.
43. A mandrel according to claim 42, wherein the mandrel comprises a metal injection molded mandrel.
44. A mandrel according to claim 41, wherein the stent pattern includes a rounded trough surface.
45. A mandrel according to claim 41, further comprising a stent material in the stent pattern.
46. A mandrel according to claim 45, wherein the stent material includes a porous material.
47. A mandrel according to claim 46, wherein the porous material is saturated with a fluid.

48. A mandrel according to claim 45, wherein the stent material includes:

a first layer of a first stent material; and
a second layer of a second stent material.

49. A mandrel according to claim 48, wherein the second layer includes a radiopaque material.

50. A mandrel according to claim 41, wherein the stent pattern is overfilled with a stent material.

51. A mandrel according to claim 41, wherein the mandrel is partially dissolved away from a stent material in the stent pattern.

52. A method of making a device, comprising:

providing a mandrel having a device pattern;
filling the device pattern with a device material; and
dissolving the mandrel.

53. A method of making a device according to claim 52, further comprising providing a mandrel mold having the device pattern, and wherein providing the mandrel includes forming the mandrel in the mandrel mold.

54. A method of making a device according to claim 53, wherein forming the mandrel in the mandrel mold includes metal injection molding the mandrel in the mandrel mold.

55. A method of making a device according to claim 53, wherein forming the mandrel includes placing powdered metal in the mandrel mold.

56. A method of making a device according to claim 52, wherein the device pattern includes a rounded trough surface.

57. A method of making a device according to claim 52, wherein filling the device pattern with the device material includes depositing the device material in the device pattern using chemical vapor deposition.

58. A method of making a device according to claim 52, wherein filling the device pattern with the device material includes filling the device pattern with a porous device material.

59. A method of making a device according to claim 58, further comprising saturating the porous device material with a fluid.

60. A method of making a device according to claim 52, further comprising forming pores in at least a portion of the device material.

61. A method of making a device according to claim 60, further comprising saturating the porous portion of the device material with a fluid.

62. A method of making a device according to claim 52, wherein filling the device pattern with the device material includes:

providing a first layer of a first device material in the device pattern; and

providing a second layer of a second device material in the device pattern.

63. A method of making a device according to claim 62, wherein the second layer includes a radiopaque material.

64. A method of making a device according to claim 52, wherein filling the device pattern comprises overfilling the device pattern.

65. A method of making a device according to claim 64, further comprising removing an excess portion of the device material from the mandrel.

66. A method of making a device according to claim 52, wherein dissolving the mandrel comprises partially dissolving the mandrel and then fully dissolving the mandrel, and wherein the method further comprises changing the configuration of the device material after the partial dissolution of the mandrel and before the full dissolution of the mandrel.